

Refer to: HSA-10/WZ-145

Mr. William Jamieson
PMG Ltd.
P.O. Box 247
Novelty, Ohio 44072

Dear Mr. Jamieson:

This is in response to your letter of December 3, 2002, requesting Federal Highway Administration (FHWA) acceptance of your company's Type I and II barricades, Vertical Panel, and Universal A-Barriers as crashworthy traffic control devices for use in work zones on the National Highway System (NHS). Accompanying your letter was product literature illustrating the various devices. You requested that we find these devices acceptable for use on the NHS under the provisions of National Cooperative Highway Research Program (NCHRP) Report 350 "Recommended Procedures for the Safety Performance Evaluation of Highway Features" without additional crash testing.

Introduction

The FHWA guidance on crash testing of work zone traffic control devices is contained in two memoranda. The first, dated July 25, 1997, titled "INFORMATION: Identifying Acceptable Highway Safety Features," established four categories of work zone devices: Category I devices were those lightweight devices which could be self-certified by the vendor, Category II devices were other lightweight devices which needed individual crash testing, Category III devices were barriers and other fixed or massive devices also needing crash testing, and Category IV devices were trailer mounted lighted signs, arrow panels, etc. The second guidance memorandum was issued on August 28, 1998, and is titled "INFORMATION: Crash Tested Work Zone Traffic Control Devices." This later memorandum lists devices that are acceptable under Categories I, II, and III.

PMG Sentinel Type I and Type II Foldable "A"-Frame Traffic Control Devices

Your request was for two products, both of which can serve as either a Type I or Type II device. Both feature recessed horizontal panels to accommodate reflective sheeting, and are distinguished by the size of the recessed panel, either 12 inches or 8 inches high.

| | | |
|-------------------|------------|--|
| PMG Part Numbers: | 12" Panel: | 112BC for Type I, or 212BC for Type II 12.25" x 24.25" top panel, 8.25 x 24.25" bottom panel |
| | 8" Panel: | 108BC for Type I, or 208BC for Type II 8.25" x 24.25" panel top and bottom |

PMG Sentinel Type I Vertical Panel Foldable “A”-Frame Traffic Control Devices

This request was for two products, both of which are Type I vertical panels, distinguished by overall height. You call them Sentinel Jr. and the Sentinel Mini.

PMG Part Numbers: 112BJ, 12.125” x 24.125” panels, overall height of 41” (Junior)
112BM, 12.125” x 24.125” panels, overall height of 30.5” (Mini)

Findings

The PMG Limited high-density polyethylene plastic vertical panels and Type I & II barricades are similar in size, weight, and materials to other crashworthy vertical panels and barricades. They can be expected to perform as well as the generic steel leg barricades found acceptable in FHWA Acceptance Letter WZ-85 dated November 15, 2001. Therefore, the devices described in the various requests above and detailed in the enclosed drawings are acceptable for use on the NHS under the range of conditions that the generic barricades were tested, when proposed by a State. Note that this acceptance is for the barricades and vertical panels, plus reflective sheeting (and properly located ballast, if needed), only. If these are to be used with warning lights they should be crash tested with the type of light(s) they will be used with.

You also requested acceptance for the PMG Sentinel Types I, II, and III Universal A-Barrier Traffic Control Devices. This barricade system is unlike any generic barricade system that has been crash tested. Therefore we must recommend that these barricades be crash tested before we can take action.

Findings

The results of the testing met the FHWA requirements and, therefore, the devices described in the various requests above and detailed in the enclosed drawings are acceptable for use on the NHS under the range of conditions tested, when proposed by a State.

Please note the following standard provisions that apply to FHWA letters of acceptance:

- Our acceptance is limited to the crashworthiness characteristics of the devices and does not cover their structural features, or conformity with the Manual on Uniform Traffic Control Devices.
- Any changes that may adversely influence the crashworthiness of the device will require a new acceptance letter.
- Should the FHWA discover that the qualification testing was flawed, that in-service performance reveals unacceptable safety problems, or that the device being marketed is significantly different from the version that was crash tested, it reserves the right to modify or revoke its acceptance.
- You will be expected to supply potential users with sufficient information on design and installation requirements to ensure proper performance.

- You will be expected to certify to potential users that the hardware furnished has essentially the same chemistry, mechanical properties, and geometry as that submitted for acceptance, and that they will meet the crashworthiness requirements of FHWA and NCHRP Report 350.
- To prevent misunderstanding by others, this letter of acceptance, designated as number WZ-145 shall not be reproduced except in full. This letter, and the test documentation upon which this letter is based, is public information. All such letters and documentation may be reviewed at our office upon request.
- PMG Limited traffic control devices may include patented components and if so are considered "proprietary." The use of proprietary work zone traffic control devices in Federal-aid projects is generally of a temporary nature. They are selected by the contractor for use as needed and removed upon completion of the project. Under such conditions they can be presumed to meet requirement "a" given below for the use of proprietary products on Federal-aid projects. On the other hand, if proprietary devices are specified for use on Federal-aid projects, except exempt, non-NHS projects, they: (a) must be supplied through competitive bidding with equally suitable unpatented items; (b) the highway agency must certify that they are essential for synchronization with existing highway facilities or that no equally suitable alternative exists or; (c) they must be used for research or for a distinctive type of construction on relatively short sections of road for experimental purposes. Our regulations concerning proprietary products are contained in Title 23, Code of Federal Regulations, Section 635.411, a copy of which is enclosed.

Sincerely yours,

Michael S. Griffith
Acting Director, Office of Safety Design
Office of Safety

Enclosure

Sec. 635.411 Material or product selection.

(a) Federal funds shall not participate, directly or indirectly, in payment for any premium or royalty on any patented or proprietary material, specification, or process specifically set forth in the plans and specifications for a project, unless:

(1) Such patented or proprietary item is purchased or obtained through competitive bidding with equally suitable unpatented items; or

(2) The State highway agency certifies either that such patented or proprietary item is essential for synchronization with existing highway facilities, or that no equally suitable alternate exists; or

(3) Such patented or proprietary item is used for research or for a distinctive type of construction on relatively short sections of road for experimental purposes.

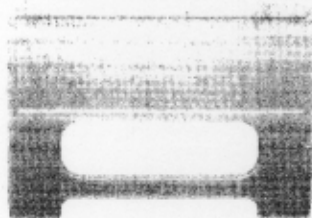
(b) When there is available for purchase more than one nonpatented, nonproprietary material, semifinished or finished article or product that will fulfill the requirements for an item of work of a project and these available materials or products are judged to be of satisfactory quality and equally acceptable on the basis of engineering analysis and the anticipated prices for the related item(s) of work are estimated to be approximately the same, the PS&E for the project shall either contain or include by reference the specifications for each such material or product that is considered acceptable for incorporation in the work. If the State highway agency wishes to substitute some other acceptable material or product for the material or product designated by the successful bidder or bid as the lowest alternate, and such substitution results in an increase in costs, there will not be Federal-aid participation in any increase in costs.

(c) A State highway agency may require a specific material or product when there are other acceptable materials and products, when such specific choice is approved by the Division Administrator as being in the public interest. When the Division Administrator's approval is not obtained, the item will be nonparticipating unless bidding procedures are used that establish the unit price of each acceptable alternative. In this case Federal-aid participation will be based on the lowest price so established.

(d) Appendix A sets forth the FHWA requirements regarding (1) the specification of alternative types of culvert pipes, and (2) the number and types of such alternatives which must be set forth in the specifications for various types of drainage installations.

(e) Reference in specifications and on plans to single trade name materials will not be approved on Federal-aid contracts.

Sentinel™



12" TOP PANEL

112-BC
212-BC



SENTINEL JR.

112-BJ

FEATURES-

- Contains recycled material
- NCHRP-350 compliant
- Compression molded hinges
- Shock absorbing light mounting bracket (available only on 8" and 12" models)
- Recessed panel
- Stacking lugs
- Positive stops in open position
- Optional removable panels
- Designed to eliminate sagging in warm weather
- Available in 8" and 12" top panels
- Stenciling available
- Can be used as a sign stand with optional bracket
- Patent pending
- 1" quick fill hole
- Solid plastic feet
- Made from high density polyethylene
- Blow molded



SENTINEL MINI

112-BM



8" TOP PANEL

108-BC
208-BC

OPTIONS

- For Sentinel Jr. and Sentinel Mini, pre-drilled holes to accommodate stabilizing rods (holes standard on Sentinel)
- Optional rods can be added to each leg for added stability
- Optional sign stand bracket

MOLDED IN STANDARD COLORS

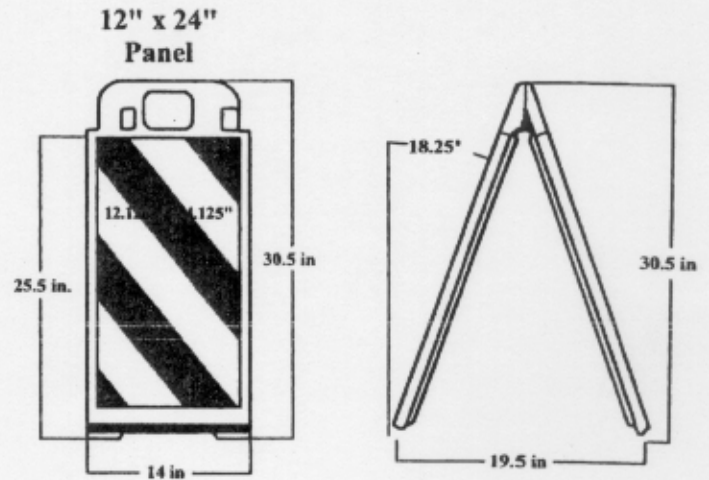
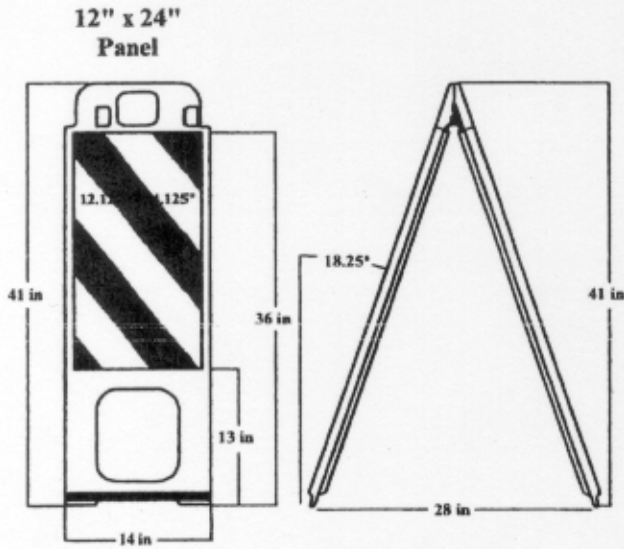
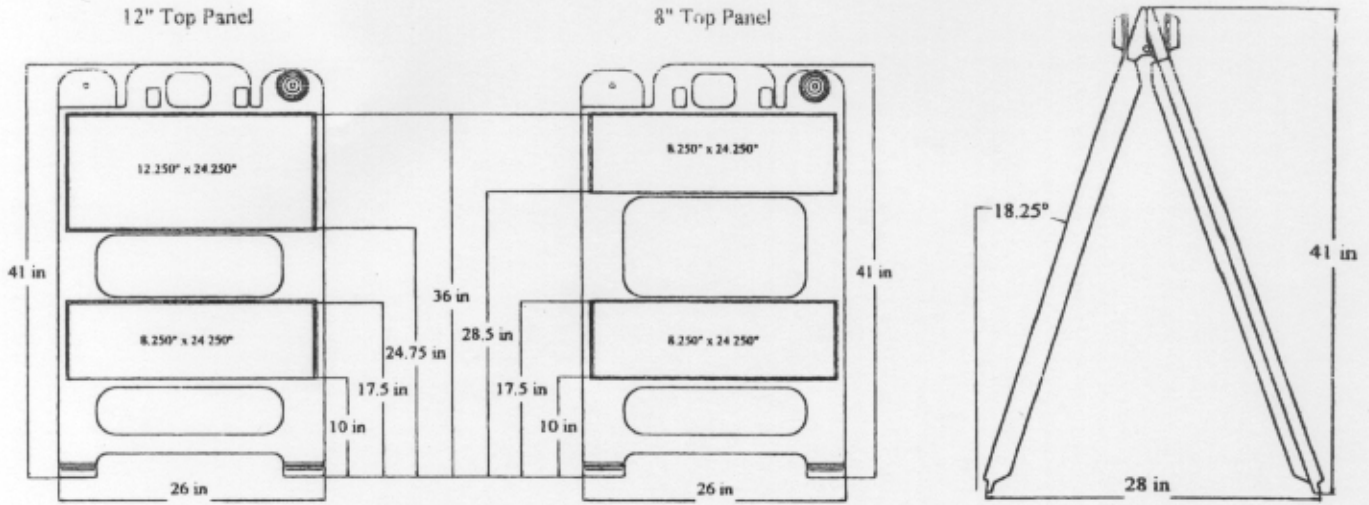
- Orange
- Yellow
- White
- Optional Colors Available

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TOLL FREE - (877) 440-4483

Visit our web site at www.pmg ltd.net • Please contact us for your local rep / distributor

Sentinel™ Specifications



| | 12" Top Panel | 8" Top Panel | Sentinel Jr. | Sentinel Mini |
|-----------------------------------|------------------|------------------|-------------------|-------------------|
| Model Number | 112-BC, 212-BC | 108-BC, 208-BC | 112-BJ | 112-BM |
| Height to top of handle | 41" (1041 mm) | 41" (1041 mm) | 41" (1041 mm) | 30.5" (775 mm) |
| Height to top of upper tape panel | 36" (914 mm) | 36" (914 mm) | 36" (914 mm) | 25.5" (648 mm) |
| Height to top of lower tape panel | 17.5" (445 mm) | 17.5" (445 mm) | n/a | n/a |
| Width across panel | 26" (660 mm) | 26" (660 mm) | 14" (356 mm) | 14" (356 mm) |
| Thickness closed | 3" (76 mm) | 3" (76 mm) | 2.75" (70 mm) | 2.75" (70 mm) |
| Spread at base | 28" (711 mm) | 28" (711 mm) | 28" (711 mm) | 19.5" (495 mm) |
| Angle of open panel | 18.25° | 18.25° | 18.25° | 18.25° |
| Weight (unfilled) | 15 lbs. (6.8 kg) | 14 lbs. (6.4 kg) | 8.5 lbs. (3.8 kg) | 7 lbs. (3.2 kg) |
| Fill weight per leg (suggested) | 15 lbs. (6.8 kg) | 15 lbs. (6.8 kg) | 3.5 lbs. (1.6 kg) | 3.5 lbs. (1.6 kg) |
| Fill hole diameter | 1" (25.4 mm) | 1" (25.4 mm) | 1" (25.4 mm) | 1" (25.4 mm) |

Dimensions are approximate in open position • Patent Pending

PMG Limited • Novelty, Ohio 44072 • Toll Free: 877-440-4483